SOIL SURVEY OF THE MOBILE AREA, ALABAMA.

By R. T. AVON BURKE and PARTY.

LOCATION AND BOUNDARIES OF THE AREA.

The Mobile area, covering about 461 square miles, or 295,168 acres, comprises a part of middle eastern Mobile County. Beginning at a point 6 miles from the northern boundary of the county, it extends southward along Mobile and Tensas rivers and Mobile Bay a distance of 36 miles, to within about 18 miles of the Gulf of Mexico, and has an average width of about 15 miles. The area includes the city of Mobile, with a population in 1900 of 38,469, and the important towns of Citronelle, Mount Vernon, Springhill, Mauvilla, and Creola.

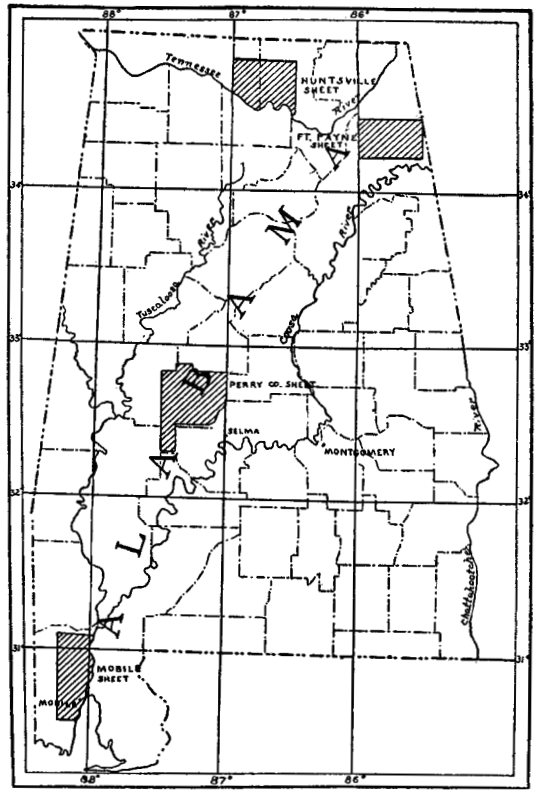

FIG. 16.—Sketch map showing location of the Mobile area, Alabama.

HISTORY OF SETTLEMENT AND AGRICULTURAL DEVELOPMENT.

Although the part of the country now included in Mobile County was visited by Pineda in 1519 in his search for a western passage around Florida, by De Soto in 1540, and d'Iberville in 1699, it was not until 1701 that a permanent settlement was established. This was made by d'Iberville at Fort St. Louis, situated on the Mobile River at a point called Twenty-seven-mile Bluff. Eight years later a flood in the river caused the abandonment of this position and the removal of the settlement to the present site of Mobile.

Notwithstanding that the capital of the French colony was subsequently removed to Biloxi, in the Mississippi River district, Mobile continued to be an important trading post. It was one of the nine districts into which the French commercial company, styled the Louis Company, divided the southern possessions, and Bossée mentions particularly the trade in tar and furs from this port.

The colonists and the Indians early grew maize, millet, beans, potatoes, rice, and tobacco. The last two commodities were the chief agricultural exports until about 1770, when indigo, figs—introduced from Provence—and oranges—brought in from Hispaniola (Haiti)—were added to the list. Lumber, salt beef, salt fish, pecan nuts, and sassafras bark also formed a part of the exports during this period.

The area passed successively under the dominion of France, England, and Spain, and finally in 1813 became a part of the possessions of the United States.

CLIMATE.

The following table of temperature and precipitation is compiled from records of the Weather Bureau stations at Mobile and Citronelle. There is a difference of 324 feet in the elevation of the two stations, Citronelle, situated in the northern part of the county, being the higher. It will be noted that there is not a great difference in the figures of temperature, but a decided difference in those of precipitation given for these stations, and that, contrary to the usual rule, the temperature of the station of greater elevation is higher and the precipitation less. The proximity of Mobile to the Gulf may account for the greater precipitation and more moderate temperature recorded for that place.

Normal monthly and annual temperature and precipitation.

Month.	Citronelle.		Mobile.		Month.	Citronelle.		Mobile.	
	Temperature.	Precipitation.	Temperature.	Precipitation.		Temperature.	Precipitation.	Temperature.	Precipitation.
	° *F.*	*Inches.*	° *F.*	*Inches.*		° *F.*	*Inches.*	° *F.*	*Inches.*
January	51.6	4.40	51.0	5.17	August	80.2	6.23	80.0	7.25
February	54.2	5.93	54.0	5.06	September	77.4	4.00	77.0	5.42
March	60.8	4.81	59.0	7.34	October	68.1	3.07	67.0	3.11
April	67.1	3.62	68.0	4.69	November	59.6	3.08	58.0	3.79
May	74.6	3.12	74.0	4.13	December	53.4	4.12	52.0	4.46
June	79.8	5.99	80.0	6.41	Year	67.3	54.76	66.8	63.67
July	81.0	6.39	82.0	6.84					

During the months of January, February, September, October, November, and December the prevailing winds are north; during the remaining months they blow generally from the southeast, south, and southwest, and the precipitation is heaviest.

Records covering nine years for Citronelle and eight for Mobile make the average dates of killing frost as follows: Citronelle, last in spring, March 7, first in fall, November 22; Mobile, last in spring, March 6, first in fall, November 22.

With an ample and well-distributed rainfall and a long growing season the area seems particularly adapted, so far as climate is concerned, for a varied and successful agricultural industry.

PHYSIOGRAPHY AND GEOLOGY.

The area along Mobile Bay is indented by many tide-water estuaries, while along the Mobile, Middle, and Tensas rivers it is marked by bayous and low, swampy forelands, with many hammocks of sandy or loamy soil. Parallel with these bottoms is a second bottom—the Mobile or Mon Louis terraces—with a level to gently rolling surface, and a width of from 3 to 5 miles. West of the second bottom rises Maubila Ridge, a plateau with an elevation ranging from 100 to 140 feet above sea level and gradually diminishing as the Gulf is approached. Near the Gulf the surface of the ridge is rolling, with a moderate gradient to the terrace below, but the inclination becomes steeper to the north and the surface more broken, the result of the greater erosive action of the streams at higher elevations.

The drainage of the area is generally east and west, the ridge acting as a divide and the minor streams flowing into the Mobile River on one side and the Escatawpa on the other.

The greater part of the area is covered by a mantle of the Lafayette formation, beneath which occur the upper measures of the Grand Gulf group and the Pascagoula clay sands. The Lafayette is post-Tertiary in age and consists of sands and clays with scattering deposits of gravel. Within the area surveyed the sands, which are varied in color and texture, greatly predominate. Ledges of iron crust of greater or less extent frequently occur in the formation. The Grand Gulf series is Tertiary in age. It is seen at the surface only in gullies or road cuts.

Along the rivers occurs material correlated with the Recent period, consisting of alluvium deposited in the first bottoms. The second bottoms are composed of Pleistocene deposits of sand, resting on a substratum of the Grand Gulf. These sands have generally a much finer texture than the Lafayette sands, although in many cases they are of a similar texture and here probably represent the Lafayette carried down by wash from the ridge and spread out over the younger formation. A higher or third terrace is found west of Mobile. This is doubtless formed of the Lafayette with the surface sands removed.

Throughout the second bottom occur many sandy hammocks. The number of these is greatest south of Mobile. This peculiar feature is also referred to the Lafayette.

SOILS.

There are six types of soil in the Mobile area. The extent of each of these is given in the following table:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Norfolk sand	134,592	45.6	Norfolk fine sandy loam	7,168	2.4
Meadow	78,528	26.6	Mobile clay	986	.3
Norfolk loam	47,104	16.0	Total	295,168	
Orangeburg fine sandy loam	26,880	9.1			

NORFOLK LOAM.

The Norfolk loam is a fine-textured sandy loam, from 8 to 20 inches deep, grading into a sandy clay which becomes heavier as the depth increases. The soil is friable and easy to till, and contains a considerable proportion of organic matter. Lands composed of this type are variously known as "Second bottoms," "Mobile terrace," or "Mon Louis terrace."

The areas of this type occupy the strip of land lying between the first bottom, or overflowed lands, and the Maubila Ridge. The surface is generally level or gently rolling, and as a usual thing the drainage is very good, except in local depressions. These depressions seem to have no relation to the superficial drainage systems, and it is believed that they may be sinks caused by the local subsidence of the Vicksburg limestone, which is found at some distance below the surface, underneath the Grand Gulf series. Whatever their formation, these areas can nearly all be readily drained at comparatively little expense.

The soil of the Norfolk loam is derived from Pleistocene deposits, and the subsoil from the upper stratum of the Grand Gulf. The loam is typical in depth in the central part of the area and gradually becomes deeper toward the Gulf, the maximum depth occurring along the coastal bluffs.

This type, being conveniently located near Mobile, is used to supply that market with early vegetables, although the Norfolk sand could be used to better advantage, so far as the early production of such crops is concerned. Near Mount Vernon some short-staple cotton is produced, the yield per acre sometimes being as high as one bale, but probably averaging not far from one-half bale. The soil produces a number of native grasses and makes good, though not as permanent, pasture as the Norfolk fine sandy loam.

The type as a whole is best adapted to light farming and the production of the general truck crops, among which the root crops are the most successful.

The following table gives mechanical analyses of the soil and subsoil of this soil type:

Mechanical analyses of Norfolk loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8157	Mertz Station.....	Sandy loam, 0 to 14 inches.	1.00	0.24	1.56	4.36	30.52	25.66	25.66	11.40
8161	2 miles SW. of Cleveland Station.	Sandy loam, 0 to 12 inches.	1.33	.30	1.78	4.04	19.38	40.68	21.44	11.88
8159	Mount Vernon ...	Fine sandy loam, 0 to 16 inches.	.36	.14	1.04	4.24	31.90	26.58	21.36	13.98
8158	Subsoil of 8157....	Sandy clay, 14 to 36 inches.	.55	.00	.74	3.68	25.46	22.68	20.30	26.46
8160	Subsoil of 8159....	Sandy loam, 16 to 36 inches.	.34	Tr.	.94	3.74	24.64	22.08	20.34	27.42
8162	Subsoil of 8161....	Sandy clay, 12 to 36 inches.	.34	Tr.	1.40	2.30	12.60	33.40	21.56	28.14

NORFOLK SAND.

The Norfolk sand is a loose, incoherent, coarse to fine textured sandy soil with a depth of 3 feet or more. The surface soil is usually brown or dark colored from the intermixture of organic matter, while the subsoil varies from a gray to deep red. An intermediate orange shade prevails over the greater part of the area. In some places, at a depth of 3 or 4 feet, the material becomes somewhat sticky and here and there deposits of iron crust are found, while occasionally the surface is strewn with these aggregations. This feature is more prevalent as the ridge approaches Washington County. The type is loose, easy to cultivate, and from two to three weeks earlier than the other types found in the area.

The Norfolk sand occupies the greater part of the Maubila Ridge, and is characterized by rolling or broken topography. It also occurs in the second bottoms, being found at the foot of the ridge, where it represents wash from the higher lying areas, or on the hammocks, which are probably ancient bars. Large areas of this character are found north of Chickasaw Creek. The soil is deepest along the streams, or where it has accumulated by erosion.

This soil is well drained, and on the ridge the water table is far below the surface. The natural tendency to a droughty condition is not so serious here as in other areas surveyed, on account of the abundant rainfall. In the areas in the second terrace the water table is

much higher, which modifies considerably the natural tendency of the soil to become too dry.

Very little of this soil is under cultivation, being valued chiefly for its timber. Yet with proper methods of cultivation and fertilization it could be maintained in a very good state of productiveness and made to yield crops of fine quality. The areas on the ridge will probably be found best adapted to fruits, among which the fig, peach, and Japanese plums are known to do well. The small fruits, and especially the blackberry, should prove profitable. The soil is a typical early truck soil, and in many areas along the Atlantic coast is the most valuable soil used in this line of agriculture. The terrace areas in the present survey are especially valuable for the truck crops, and because of the nearness of the water table they could also be used for light general farming.

The following table gives mechanical analyses of the soil and subsoil of this soil type:

Mechanical analyses of Norfolk sand.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8150	3½ miles S. of Citronelle.	Sand, 0 to 36 inches..	0.36	1.00	10.60	19.40	42.60	14.00	7.52	4.30
8151	1 mile W. of Chunchula.	Sand, 0 to 36 inches..	.34	.48	5.68	18.16	48.86	12.00	9.64	5.00
8152	1½ miles W. of Hamburg Station.	Sand, 0 to 36 inches..	.37	.00	5.70	23.70	51.60	7.14	5.38	6.06
8148	3 miles W. of Mertz Station.	Sand, 0 to 12 inches..	.64	2.12	10.76	15.66	42.96	12.06	9.94	6.28
8146	1 mile S. of Cleveland Station.	Sand, 0 to 12 inches..	2.16	.60	10.54	31.52	35.04	6.04	8.32	7.12
8149	Subsoil of 8148....	Sand, 12 to 36 inches.	.26	2.10	11.56	15.06	45.04	10.38	7.68	7.80
8147	Subsoil of 8146....	Sand, 12 to 36 inches.	.57	.00	8.60	33.10	35.94	6.22	8.00	7.90

NORFOLK FINE SANDY LOAM.

The Norfolk fine sandy loam is a gray or brown loam, or heavy sandy loam, with a depth of 10 inches, grading into a heavy yellow loam or clay which extends usually to a depth of 3 feet or more.

This type is found on a third terrace, west of Mobile and east of Springhill. There are also irregular areas between Creola and Mount Vernon, and another near Twenty-one-mile Bluff on Mobile River. The surface of all these areas is level or gently rolling, with a slight inclination toward the east.

In derivation this soil is believed to be related to the Lafayette formation, which has been exposed through the removal of the Pleistocene deposits by erosion. The same force may also have removed some of the sands of the Lafayette, or the formation here may have been originally more clayey, either of which suppositions would account for the heavier texture of this type as compared with the Norfolk sand.

The wide adaptation of this soil type is generally recognized, and it is used to some extent for general farming, trucking, and dairying. Good crops of corn, oats, and hay are produced. Some fine herds of dairy cattle are found, and nearly all the milk used in Mobile is supplied from farms on this soil. The pastures are good, being excelled in permanency only by those on the Mobile clay.

The following table gives the mechanical analyses of the soil and subsoil of this type:

Mechanical analyses of Norfolk fine sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8155	4½ miles NW. of Mobile.	Brown loam, 0 to 9 inches.	1.46	0.30	1.56	1.40	22.00	28.24	32.44	13.10
8153	3½ miles W. of Mobile.	Brown loam, 0 to 9 inches.	1.86	.30	1.44	1.30	21.64	27.98	33.20	13.60
8156	Subsoil of 8155....	Yellow clay loam, 9 to 36 inches.	.89	.00	.50	.64	16.10	23.40	35.24	23.88
8154	Subsoil of 8153....	Clay loam, 9 to 36 inches.	.48	.10	.76	.66	16.66	28.96	26.26	26.06

ORANGEBURG FINE SANDY LOAM.

The surface soil of the Orangeburg fine sandy loam consists of a gray or brown fine sandy loam from 8 to 24 inches deep. The subsoil, into which the soil passes rather gradually, is composed of sandy clay varying in color from orange to deep red and reaching to a depth of 3 feet or more. At the contact of the soil and subsoil there usually occur considerable quantities of iron concretions. The soil, while containing a considerable proportion of sand, clods and bakes if plowed when wet. It crumbles readily, however, if broken at the right time.

This soil is found at all elevations, occupying stream terraces and being associated with the Norfolk loam and the Norfolk fine sandy loam. The areas are generally of irregular outline and surrounded by Norfolk sand, to which soil also it is evidently closely related. It is believed

to have been derived from the same formation, where there has been a local variation in the materials or where these have been changed from their original composition by erosion.

Very little of this soil is at present under cultivation. It supports forests of longleaf pine or thickets of stunted black-jack oak. Upland rice, corn, and oats are successfully grown. The type is especially prized for the production of small fruits, and most of the peach orchards of the area are planted on it. It is a fairly good soil for general farming.

The following table gives mechanical analyses of the soil and subsoil of this type:

Mechanical analyses of Orangeburg fine sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8165	2 miles N. of Chunchula.	Fine sandy loam, 0 to 12 inches.	0.92	Tr.	2.26	5.76	48.26	28.30	8.30	7.10
8163	2 miles S. of Chunchula.	Fine sandy loam, 0 to 10 inches.	.80	Tr.	1.32	2.54	31.04	33.74	22.22	8.50
8166	Subsoil of 8165....	Red clay, 12 to 36 inches.	.52	0.00	1.10	3.56	30.82	22.88	10.96	30.12
8164	Subsoil of 8163....	Red clay, 10 to 36 inches.	.22	Tr.	.54	1.14	28.30	21.34	14.70	33.40

MOBILE CLAY.

The Mobile clay consists of a yellow loam, sometimes slightly sandy, with an average depth of 8 inches, resting on a stiff, plastic yellow clay or sandy clay subsoil extending to a depth of 3 or more feet. The surface is characterized by the presence of many iron concretions. This soil usually, but not always, overlies the materials forming the Orangeburg fine sandy loam, the clay subsoil of which is seen in outcrops along the streams.

Only a limited area of this type occurs in the present survey, lying just west of Wheelerville, on the highest part of the divide, but it is known to have much greater extent to the west. The surface is flat and marked by many swampy, pondlike depressions covered by a scrubby growth of gum. The drainage is generally poor.

Although but little of this soil is under cultivation, it is considered the best soil of the uplands for general farming, and, indeed, is only exceeded for this purpose by the Norfolk fine sandy loam of the third terrace. The soil is best adapted to grain and grass. The pastures

are good and very permanent. The indications are that stock raising could be made a profitable industry on this soil.

The following table gives mechanical analyses of the soil and subsoil of this type:

Mechanical analyses of Mobile clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8167	2½ miles W. of Wheelerville.	Yellow sandy loam, 0 to 10 inches.	0.88	0.04	1.56	6.30	21.84	32.92	19.66	17.20
8169	3 miles SW. of Wheelerville.	Brown loam, 0 to 10 inches.	.97	.50	3.70	8.30	18.36	24.32	24.78	19.16
8170	Subsoil of 8169....	Yellow clay, 10 to 36 inches.	.70	.44	3.90	7.44	16.60	20.90	29.48	20.94
8168	Subsoil of 8167....	Yellow clay, 10 to 36 inches.	.39	.00	1.70	4.90	15.70	25.32	22.64	29.50

MEADOW.

The Meadow comprises all poorly drained, swampy, and overflowed lands. These usually lie adjacent to the streams. The soils are of various textures. Throughout the forelands of the larger streams occur many hammocks, some of which are cultivated, returning large yields of cotton and cane. In the uplands the Meadow occurs in very narrow strips, and the soil is usually sandy.

Most of the Meadow areas are covered with forest and a perfect jungle of undergrowth.

AGRICULTURAL CONDITIONS.

Of the 105,137 acres of land included in farms in Mobile County only 17,464 acres are improved. Most of this improved land lies within the area surveyed, where it is used chiefly in the production of truck and fruit crops. As compared with other counties of the State a considerable quantity of grass is produced, and quite a number of cattle, together with some Merino sheep, are raised. These have a free range in the forest grazing lands, which form so large a part of the area.

At present lumbering is the most important industry in the county, and the pine lands are rapidly being deforested. The logs are generally floated down the Mobile River to Mobile, where they are sold to the mills. The product is exported to Europe or shipped to Northern markets. The distilling of turpentine also gives employment to many.

The lands deforested are generally allowed to lie idle, and a second growth of black-jack oak soon springs up.

Most of the cultivated lands lie on the second terrace in the vicinity of Mobile. But little agricultural use is made of the uplands, save to produce fruit and vegetables for domestic use in small patches around the hamlets and railroad stations.

The farm buildings are best on the Norfolk loam. They usually consist of a one-story house, surrounded by a wide veranda, and a small barn for sheltering the work stock and a cow or two, the other cattle, if any are owned, being allowed to shift for themselves on the range the year around. The buildings on the ridge are smaller and become more and more primitive as the distance increases south from Citronelle. Many of these are merely log cabins, with mud-plastered chimneys, but each has its little patch of fruit and vegetables, which indicates by its productiveness the possibilities of the prevailing soil type—the Norfolk sand—if it should be used commercially for these crops.

The size of the tracts or farms varies from 40 to 1,000 acres, and the value per acre ranges from $1 to $15, depending upon the proximity to Mobile and the character of the forest growth. Very few, if any, of the farms are rented.

Of the truck crops produced for Northern markets cabbage is quite important. The annual shipment amounts to about 150,000 crates. The earliest crop is set out in October and sent to market in December. Other crops are shipped in May and June. The growing of this and other truck is said to be quite profitable.

Nearly all the berries are raised with profit, competing both in earliness and quality with any grown in the South, while the tree fruits, such as peaches, pears, and plums, are ready for market in May and June, and are earlier and bring a better price than California fruits of the same sorts. Grapes can be marketed in June. The native Scuppernong and the Delaware are best adapted to the soils and climate, but Moore's Early, Champion, Concord, and Niagara can be produced with profit.

With a number of good soils suited to the production of a variety of early vegetables and fruits, it would seem that the area surveyed should have made much greater progress in agriculture than it has, but be that as it may, there can be little doubt that with the development of the country and the greater demand for Southern-grown products by the growing cities and communities in the colder parts of the country this part of Alabama will come to be an important source of supply. To emphasize the possibilities of the region a brief summary of the soils and their adaptation to crops is given below.

The Norfolk sand, covering a large area, is now little cultivated. It can be bought for from $1 to $2 per acre. This is the typical early

truck soil of the Atlantic seaboard. In the area surveyed it is two or three weeks earlier than the Norfolk loam, the soil now used for the production of a great part of the truck raised for the Mobile and Northern markets. With earliness so important a factor in the price of such products, the need for shifting the industry must be at once apparent. The Norfolk sand, being a light, porous soil of considerable depth, will need more careful management and heavier fertilization than the soils now used, but the difference in the profits, judging from the development of other sections of the country, should more than justify the additional care and expense.

The Norfolk loam, though used to a large extent for the production of early vegetables, is better adapted to general trucking. The root crops do particularly well upon it, and it would seem the specialty of potato production on a large scale might be made a success. The soil is likewise adapted to nut culture, and most of the pecan orchards are found on it. Experiments with English walnuts should be tried. This type naturally gives better yields than the Norfolk sand, but the quality of the vegetables is not so good. For agricultural purposes it brings from $3 to $15 an acre.

The Norfolk fine sandy loam, occupying the third terrace, west of Mobile, is also used to some extent for general trucking. It is less desirable for this purpose than the Norfolk loam. Its chief importance in the area surveyed is as a dairy soil, and there are some fine herds of Jersey cattle in the neighborhood of Mobile. The soil is well adapted to grain and grass and general farming.

Only a small area of the Mobile clay occurs in the area. It is little under cultivation, and needs drainage. It is the best grass and grain soil in the area, and offers opportunity for stock raising.

The Orangeburg fine sandy loam is yet largely in forest, but produces some upland rice, corn, and oats. It is especially adapted to the cultivation of small fruits, and most of the peach orchards of the area are planted on it. As a general farming soil it is fairly good.

Chicago, St. Louis, and Cincinnati are the great markets reached by the products of the area. Four lines of railroad are available for transportation—the Southern, Mobile and Ohio, Mobile, Jackson and Kansas City, and the Louisville and Nashville. These offer a very good service and bring the area within thirty to sixty hours of St. Louis, Chicago, and New York. Some of the lines operate refrigerator cars which handle perishable products in carload lots or less.

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U.S. DEPT OF AGRICULTURE
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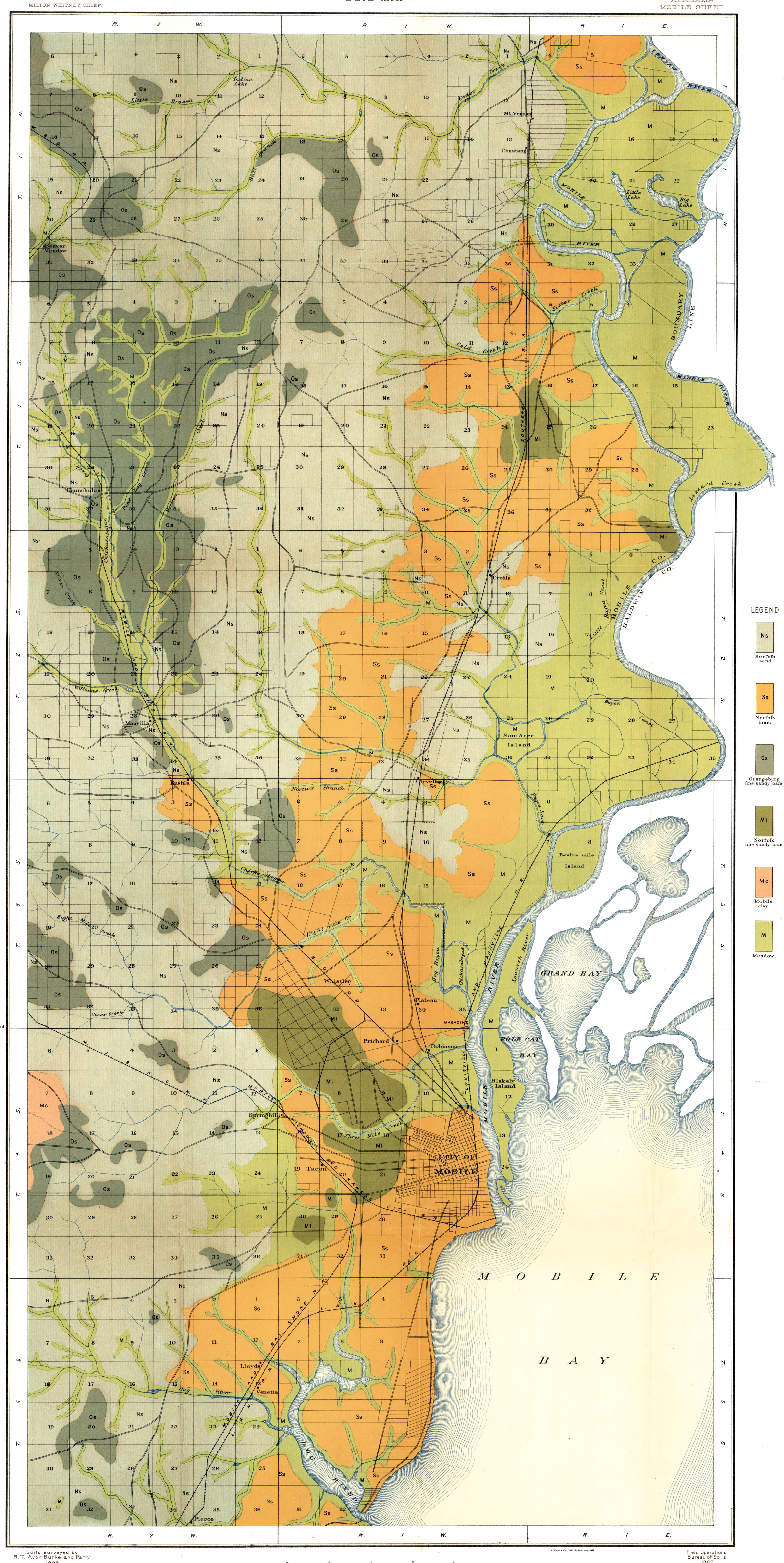
SOIL MAP

ALABAMA
MOBILE SHEET



SOIL PROFILE
(3 feet deep)

Norfolk sand — S
Norfolk loam — Ssc, Scc
Orangeburg fine sandy loam — Ssc, Scc
Norfolk fine sandy loam — Sc, C
Mobile clay — Sc, C
Meadow

LEGEND

S Sand
Ssc Sandy loam
Scc Sandy clay
Sc Loam
C Clay and sand
C Clay

LEGEND

Ns Norfolk sand
Ss Norfolk loam
Os Orangeburg fine sandy loam
Ml Norfolk fine sandy loam
Mc Mobile clay
M Meadow

Soils surveyed by
R. T. Avon Burke and Party
1903.

J. Bien & Co. Lith. Rudolphsplatz, NYC.

Field Operations
Bureau of Soils
1903.

Scale 1 inch = 1 mile